

## Abstract

A method and a device for field-oriented regulation of a synchronous machine excited by a permanent magnet are described. A direct-axis voltage component and a quadrature-axis voltage component of the control voltage for the synchronous machine are determined from a quadrature-axis current component setpoint value thus determined and from rotational speed information using a stationary machine model in a decoupling network. These voltage components are converted into triggering pulses for the synchronous machine. The regulating system does not require any information regarding the phase currents of the polyphase system.